AMENDMENTS TO THE CLAIMS

Claim 1 (previously presented): A substrate processing method for removing an ArF resist film from a substrate having the ArF resist film, comprising the steps of:

irradiating an ultraviolet ray having a predetermined wavelength to the ArF resist film;

altering the ArF resist film irradiated with the ultraviolet ray into a water-soluble state by placing the substrate in a chamber and feeding an ozone gas and water vapor to the chamber; and

removing the ArF resist film from the substrate by feeding pure water to the ArF resist film altered into the water-soluble state,

wherein when the water vapor and the ozone gas are fed to the chamber, a feed amount of ozone gas with respect to the water vapor is decreased while the water vapor is fed to said chamber at a constant flow rate in such a way as not to cause dew condensation on the substrate placed in the chamber.

Claim 2 (original): The substrate processing method according to claim 1, wherein the substrate further has an antireflection film compatible with an ArF ray, and

the antireflection film together with the ArF resist film is irradiated with an ultraviolet ray, becomes water-soluble by said ozone gas and the water vapor, and is collectively removed together with the ArF resist film from the substrate by the pure water.

Claim 3 (previously presented): A substrate processing method for removing an antireflection film from a substrate having said antireflection film, comprising the steps of:

irradiating an ultraviolet ray having a predetermined wavelength to the antireflection film;

altering the antireflection film irradiated with the ultraviolet ray into a water-soluble state by placing the substrate in a chamber and feeding an ozone gas and water vapor to the chamber; and

removing said antireflection film from the substrate by feeding pure water to said reflection film altered into the water-soluble state,

wherein when the water vapor and the ozone gas are fed to the chamber, a feed amount of ozone gas with respect to the water vapor is decreased while the water vapor is fed to said chamber at a constant flow rate in such a way as not to cause dew condensation on the substrate placed in the chamber.

Claim 4 (previously presented): A substrate processing method for removing a resist film from a substrate having the resist film undergone an ion implantation process at a high dose, comprising the steps of:

irradiating an ultraviolet ray having a predetermined wavelength to said resist film;

altering the resist film irradiated with the ultraviolet ray into a water-soluble state by placing the substrate in a chamber and feeding an ozone gas and water vapor to the chamber; and

removing the resist film from the substrate by feeding pure water to the resist film altered into the water-soluble state,

wherein when the water vapor and the ozone gas are fed to the chamber, a feed amount of ozone gas with respect to the water vapor is decreased while the water vapor is fed to said chamber at a constant flow rate in such a way as not to cause dew condensation on the substrate placed in the chamber.

Claim 5 (original): The substrate processing method according to claim 4, wherein a dosage in the ion implantation process is equal to or greater than $1 \times 10^{15}/cm^2$.

Claim 6 (canceled)

Claim 7 (previously presented): The substrate processing method according to claim 1, wherein feeding of the ozone gas to the chamber is periodically suspended.

Claim 8 (previously presented): The substrate processing method according to claim 1, wherein a pressure at which dew condensation occurs in the chamber is acquired beforehand, when an amount of the water vapor to be fed to the chamber is made constant with an interior of the chamber held at a predetermined temperature, and

when the water vapor and the ozone gas are fed to the chamber, the feed amount of ozone gas is controlled while a pressure in the chamber is measured in such a way that the measured pressure does not exceed the pressure at which the dew condensation occurs.

Claim 9 (previously presented): The substrate processing method according to claim 1, wherein the chamber is evacuated in such a way as to keep an interior of the chamber at a constant positive pressure when the water vapor and the ozone gas are fed to the chamber.

Claim 10 (currently amended): A substrate processing method for removing an ArF resist film from a substrate having the ArF resist film, comprising the steps of:

irradiating an ultraviolet ray having a predetermined wavelength to the ArF resist film;

altering said ArF resist film irradiated with the ultraviolet ray in such a way as to be ~~water-soluble~~ soluble with a predetermined chemical solution by placing the substrate in a chamber and feeding an ozone gas and water vapor to the chamber; and

removing the ArF resist film from the substrate by feeding the chemical liquid to the altered ArF resist film,

wherein when the water vapor and the ozone gas are fed to the chamber, a feed amount of ozone gas with respect to the water vapor is decreased while the water vapor is fed to the chamber at a constant flow rate in such a way as not to cause dew condensation on the substrate placed in the chamber.

Claim 11 (original): The substrate processing method according to claim 10, wherein the substrate further has an antireflection film compatible with an ArF ray, and

the antireflection film together with the ArF resist film is irradiated with an ultraviolet ray, is altered by the ozone gas and the water vapor, and is collectively removed together with the ArF resist film from the substrate by the chemical solution.

Claim 12 (previously presented): A substrate processing method for removing an antireflection film from a substrate having the antireflection film, comprising the steps of:

irradiating an ultraviolet ray having a predetermined wavelength to the antireflection film;

altering said antireflection film irradiated with the ultraviolet ray in such a way as to be soluble with a predetermined chemical liquid by placing the substrate in a chamber and feeding an ozone gas and water vapor to the chamber; and

removing the antireflection film from the substrate by feeding the chemical liquid to the altered antireflection film,

wherein when the water vapor and the ozone gas are fed to the chamber, a feed amount of ozone gas with respect to the water vapor is decreased while the water vapor is fed to the chamber at a constant flow rate in such a way as not to cause dew condensation on the substrate placed in the chamber.

Claim 13 (previously presented): A substrate processing method for removing a resist film from a substrate having the resist film undergone an ion implantation process at a high dose, comprising the steps of:

irradiating an ultraviolet ray having a predetermined wavelength to the resist film;

altering the resist film irradiated with the ultraviolet ray in such a way as to be soluble with a predetermined chemical liquid by placing said substrate in a chamber and feeding an ozone gas and water vapor to the chamber; and

removing the resist film from the substrate by feeding the chemical liquid to the altered resist film,

wherein when the water vapor and the ozone gas are fed to the chamber, a feed amount of ozone gas with respect to the water vapor is decreased while the water vapor is fed to the chamber at a constant flow rate in such a way as not to cause dew condensation on the substrate placed in the chamber.

Claim 14 (original): The substrate processing method according to claim 13, wherein a dosage in said ion implantation process is equal to or greater than $1 \times 10^{15}/cm^2$.

Claim 15 (canceled)

Claim 16 (previously presented): The substrate processing method according to claim 10, wherein feeding of the ozone gas to the chamber is periodically suspended.

Claim 17 (previously presented): The substrate processing method according to claim 10, wherein a pressure at which dew condensation occurs in the chamber is acquired beforehand, when an amount of the water vapor to be fed to the chamber is made constant with an interior of the chamber held at a predetermined temperature, and

when the water vapor and the ozone gas are fed to the chamber, the feed amount of ozone gas is controlled while a pressure in the chamber is measured in such a way that the measured pressure does not exceed the pressure at which the dew condensation occurs.

Claim 18 (previously presented): The substrate processing method according to claim 10, wherein the chamber is evacuated in such a way as to keep an interior of the chamber at a constant positive pressure when the water vapor and the ozone gas are fed to the chamber.

Claim 19 (previously presented): The substrate processing method according to claim 10, wherein the chemical liquid is an alkaline chemical liquid.

Claim 20 (original): The substrate processing method according to claim 19, wherein the alkaline chemical liquid is any one of an APM solution, an ammonium hydroxide aqueous solution, or a tetramethyl ammonium hydroxide (TMAH) aqueous solution.

Claim 21 (previously presented): The substrate processing method according to claim 1, wherein an ultraviolet lamp or an excimer laser with a wavelength of 172 nm to 193 nm is used for ultraviolet irradiation.

Claims 22-28 (canceled)

Claim 29 (original): A computer-readable memory medium having stored a program which causes a computer to controls a substrate processing apparatus which processes a substrate placed in a chamber having a heating mechanism with water vapor and ozone gas to execute the processes of (a) placing a substrate having any one of an ArF resist film, an antireflection film, and a high-dose-ion-implanted resist film, which has undergone an ultraviolet irradiation process in the chamber, (b) keeping an interior of the chamber at a predetermined temperature, and (c) altering the film so as to be soluble with a predetermined process liquid by reducing a feed amount of ozone gas into the chamber while the water vapor is fed into the chamber at a constant flow rate in such a way as not to cause dew condensation on the substrate.

Claim 30 (original): The computer-readable memory medium according to claim 29, wherein the program causes the computer to control the substrate processing apparatus so as to periodically suspend feeding of the ozone gas to the chamber.

Claim 31 (canceled)

Claim 32 (previously presented): The substrate processing method according to claim 3, wherein feeding of the ozone gas to the chamber is periodically suspended.

Claim 33 (canceled)

Claim 34 (previously presented): The substrate processing method according to claim 4, wherein feeding of the ozone gas to the chamber is periodically suspended.

Claims 35-36 (canceled)